ENGELMANN (G. J.)

With the Author's Compliments.

THE

DIFFICULTIES AND DANGERS

OF

BATTEY'S OPERATION.

BY

GEORGE J. ENGELMANN, M.D.,
FELLOW OF THE AMERICAN GYNECOLOGICAL SOCIETY; FELLOW OF THE LONDON OBSTETRICAL SOCIETY; CONSULTING SURGEON TO THE ST. LOUIS FEMALE HOSPITAL, ETC.

EXTRACTED FROM THE
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By GEO. J. ENGELMANN, M.D.,
MISSOURI.

THE extirpation of the ovaries in those extreme cases of pelvic suffering which involve the entire system, and especially the nervous organization, in the local distress, I deem one of the greatest innovations of modern gynæcological surgery. It is a desperate but not unpromising remedy in those hopeless cases which all treatment has failed to relieve.

The operation is a fascinating one, and it is so recent that the accounts we have are rather of its successes, while its dangers have been somewhat underrated; so that the surgeon may be tempted to undertake it on account of the brilliant results achieved in some of the cases, without a due consideration of the failures in others, or of the difficulties to be encountered.

As an advocate of Battey's operation, I wish to call attention to its difficulties and dangers. I shall say nothing as to the indications or the results which have been achieved. These I have discussed in a paper which will appear in the July number of the *American Journal of Obstetrics*.[1]

My views are based upon an analysis of the forty-seven cases at present known to me, three cases upon which I have myself operated, and numerous operations upon the cadaver, by the abdominal, the vaginal, and the *direct lateral* method.

In speaking of the operation I shall have reference to the abdominal method only, as, in my judgment, there are but few cases which are suitable for the vaginal section. The latter has proved less dangerous to life than the abdominal section, but it is far inferior in its results: 42.3 per cent. of the patients operated

[1] Battey's Operation. Three Fatal Cases, with some Remarks upon the Indications for the Operation. Am. Journal Obst., July, 1878.

on by the abdominal section died, while only 17.6 per cent. of the vaginal sections proved fatal. Not a single patient who survived the abdominal operation was not at least somewhat improved by it; while the vaginal method shows 52.9 per cent. not improved; some even made worse; 29.4 per cent. were improved by the vaginal operation to 57.5 per cent. improved by the abdominal. Moreover, it is always questionable whether the operation can be completed by the vaginal route or not, as it is almost impossible to determine beforehand the condition of the pelvic viscera; and if the ovary is tied down, or imbedded in inflammatory products, the operator will be unable to remove it per vaginam. Six of the eighteen cases attempted by the vaginal method (just one-third) could not be completed; one was abandoned by Sims; another by Thomas, who finally operated successfully by the abdominal section; and in four cases Battey was unable to remove the ovaries entire, so that the operation was left practically unfinished: it is subjecting the patient to the dangers of the operation without even the certainty of being able to completely remove the offending organs, which, whatever the difficulties may be, can always be done by the abdominal method. In speaking of the abdominal method I shall have in view the incision in the *linea alba*, which is the one generally demanded.

The idea of what I would call the direct lateral method, the semilunar incisions in the iliac region, was first suggested to me by my friend, Dr. Trenholme. It brings us nearer to the ovary, but necessitates two incisions, endangers the epigastric artery, and does not save the peritoneum. I have attempted it only on the cadaver, and trust that more experienced operators will give it their consideration.

Since writing the above I have received Hegar's paper on *The Castration of Women* (Nos. 136–138, Volkmann's Klinische Vortræge), with a list of his cases.

Hegar has thrice successfully operated by the direct lateral method, "*Flankenschnitt*," as he terms it; once for ovaralgia and ovaritis, and twice in cases of uterine tumor. Although successful in every instance, the author justly limits the indications for the direct lateral method to those cases in which lateral adhesions exist, binding the ovaries to the sides of the pelvis, and even then only if the adhesions are not too extensive, and if the ovaries are not imbedded in pathological products. In cases of

uterine tumors, prolapse or displacement of the ovary, he advises the incision to be made directly over the organ.

My own observation, corroborated by the experience of Hegar, leads me to consider the direct lateral method as serviceable only in certain cases.

The ordinary abdominal method, the incision in the *linea alba*, can always be resorted to with safety; by this method the operation can always be completed, as the incision can be enlarged to any extent if the necessities of the case demand it. The direct lateral method is limited in its indications, like the vaginal, although adapted to a more extended class of cases.

The direct incision over the ovary, wherever it may be, is called for in case of displacement of the gland, whether by reason of uterine tumors, or of laxity of the ligaments (prolapse). The direct lateral method proper, lateral semilunar incision, may be resorted to in those cases in which the ovary is drawn to the sides of the pelvis by adhesions or tenseness of ligaments. A positive diagnosis of these conditions is, however, very difficult, and in the course of the operation unexpected complications may be found to exist which would make the operation a very unsafe one.

Battey's operation is in its execution indeed a comparatively simple one if we have a normal condition of the pelvic viscera, if the broad ligament is lax, and the ovaries free from adhesions, and not degenerated; but this condition will rarely be found to exist in cases where the removal of the ovaries is indicated.

In not one of the three cases in which I have operated was it possible to bring the ovaries into the incision, and I was obliged to manipulate in the depth of the pelvic cavity. A brief sketch of the operations will best serve to demonstrate the difficulties encountered.

Case I. Menstrual hystero-neurosis of the bronchi, menstrual asthma; operation to bring about the menopause, and thus check the distressing symptoms which accompanied the menstrual congestion.

The patient was emaciated to the last degree, yet the operation did not prove as easy as had been anticipated. There was no difficulty whatever in finding the left ovary by the guide of the uterine fundus and the Fallopian tube. It was scarcely adherent, but the broad ligaments were so tensely stretched that notwithstanding the short distance to be traversed, on account of the hollow abdomen in that emaciated body, the gland could not be

brought to light by the traction of the fingers alone. The action of the hand was somewhat hampered by the spasmodic contractions of the abdominal muscles in our patient, whose pulse and respiration began to fail as soon as complete anæsthesia was approached. With the firm grasp of a strong pair of curved dressing forceps to aid the two fingers, the ovary was at length brought sufficiently into the incision to be ligated with the partial assistance of the eye, after steady and continued traction had been made upon it. The remaining ovary, the right, was removed with less trouble.

The difficulties of this operation were increased by the very free bleeding from the incisions, both in the abdominal parietes and the peritoneum, as well as by the constant contractions of the abdominal muscles, on account of which I was obliged, during the operation, to enlarge the incision from three and a half to four and a half inches.

CASE II. Ovaralgia, with reflex neuroses of breasts, eye, and head, ovarian dysmenorrhœa, occasional epileptic attacks, and beginning cerebral affection, with cystic degeneration of the left ovary, in a fairly nourished, well developed mulatto woman. The operation was performed for the purpose of removing the offending organs.

The incision was at once made almost from the navel to the symphysis, through a layer of from one and-a-half to two inches of adipose tissue. No bleeding whatever. It was with some difficulty that the left ovary was found with its soft, greatly altered stroma amid the several walnut-sized cysts, which, being somewhat lax, greatly resembled knuckles of intestinal coils in their feel. To one of these cysts the omentum was adherent. The ovary was seized and drawn up somewhat, but when grasped by the forceps the soft tissue gave way. I then again seized the mass with my fingers, and made firm traction upon it; in doing so, I ruptured several of the cysts; and after all the persistent efforts made to bring the ovary into the incision, the ligature, which inclosed a cyst of the parovarium, was tied almost in the depth of the pelvic cavity. The right ovary was not so firmly bound down, and hence was more readily ligated. With this also a cyst of the parovarium was removed.

CASE III. Ovaritis, ovaralgia, constant pelvic pain, with menstrual exacerbations, and recurring cellulitis. Operation performed to remove the offending organs.

This was by far the most difficult and trying of the three operations. The ovaries, both in cystic degeneration, were so deeply imbedded within the folds of the broad ligament, and with them so firmly tied down to the sides and floor of the pelvis, that it was impossible to move them. With the greatest difficulty several unsatisfactory ligatures were placed about the left ovary; but it was useless even to attempt to tie the right, so intimately was it blended with the broad ligament, and so immovably adherent to the pelvic walls. The operation must either be abandoned or the degenerate mass of the ovary torn and scooped out in the depth of the pelvis, with almost the certainty of leaving some of the tissue to do further mischief. By the advice of the able and experienced surgeons who assisted in the operation, I enlarged the incision to two inches above the navel, removed the intestines from the pelvic cavity, and then succeeded in inclosing the entire mass in the ligature, and removing the ovaries complete. This patient was a bleeder.

The time consumed in each of the first two operations was one hour; in the third, somewhat over two hours.

Every one who was present will bear witness as to the difficulties encountered in the various operations, especially Drs. Hodgen and Baumgarten, who kindly gave me their valuable assistance in each one of the three cases. They will also confirm my statement that it would have been an absurdity even to think of an attempt at securing the pedicle in the abdominal incision, as was done by Dr. Sims in his first two cases, and apparently without difficulty. In his fifth case, he again secured the pedicles in the lower angle of the wound, and there clamped them, which he considers a mistake, as the ligaments were very short, and the abdominal walls very thick, so that the traction of the pedicles produced the greatest suffering. Dr. Sims speaks of this particular operation as by no means an easy one.

Hegar, the successful German operator, tells us in the history of his very first case of extirpation of the ovaries for hemorrhage from fibroids, that after removal of the left, he was unable to bring the right ovary well into the incision on account of the tenseness of the ligament, and was obliged to tie in the pelvic cavity, and to place the ligature very close to the gland, so that an exceeding short pedicle remained.

In another case, perioophoritis, salpingitis, perimetritis, he found the ovary tied down, attached to the Fallopian tube,

which was distended with pus, and was obliged to apply the ligature within the pelvic cavity, to remove the ovary with the tube and a large portion of the broad ligament. In his last case the three ligatures which bound the pedicle of the left ovary slipped after it had been dropped, and he was obliged to tie it a second time, considerable oozing having taken place into the pelvic cavity.

Kaltenbach,[1] in his case of removal of the ovaries to control hemorrhage from uterine fibroids, had the misfortune, in dragging out the ovary, which was adherent, and closely united to the Fallopian tube, to rupture the tube, which was distended with pus. The accident was not observed during the operation, as it occurred in deep manipulation. The patient died of septic peritonitis, and the *post-mortem* examination readily revealed the escape of the purulent fluid from the ruptured sac as the cause of infection and death.

Freund,[2] in his case, was obliged to raise the uterine tumor out of the abdominal cavity before he could seize upon the ovaries. Rotation of the uterus had brought the left ovary around near the os pubis, but its attachments were so close that in tying the pedicle the uterine serosa was torn, and thus gave rise to a very disagreeable oozing. The right ovary, although in the depth of the pelvis, behind the uterus, was readily ligated, the broad ligament being well preserved.

Martin's[3] second operation, for pain, hemorrhage, and convulsions due to uterine myomata, was likewise a very difficult one. To use his own words: "Examination revealed the left ovary in the depth of the pelvis, the right near the brim. The operation was a very difficult one. The right ovary was readily reached, but was encircled by the distended, dropsical tube, and lay adjacent to a small tumor of the broad ligament of the size of a cherry. I tied and removed the tube and tumor, together with the ovary. In order to reach the left ovary, which was attached in the depth of the pelvic cavity, I was obliged to cut transversely through the rectus abdominis of the left side, and tie low down in the cavity, as the ovary could not be raised. Speedy convalescence, however, followed."

I must here also refer to the difficulty, and even the impossibility, of a complete removal of the ovaries by the vaginal sec-

[1] Hegar, Volkmann's Klinische Vortræge, 136, 138. [2] Ibid.
[3] Berliner Klinische Wochenschrift, No. 16, 1878, p. 226.

tion, as experienced in certain cases by Drs. Sims Thomas, and Battey, whose failures are in a great measure due to the piecemeal removal of the ovary necessitated by the vaginal method. I will, by way of illustrating the difficulties encountered, quote Dr. Battey's own words. When describing one of these trying operations[1] he says: "The ovary was found to be imbedded in pelvic lymph. The identification of the ovary (Battey himself being in doubt) was confirmed by the practised touch of Dr. Sims, and proved beyond controversy by portions of the stroma brought out upon my finger-nail and submitted to Drs. Gross and Sayre. It was found to be impracticable to isolate the gland entire, and I contented myself with such disintegration as I could effect with my finger-nail."

This is, perhaps, one of the most marked cases. But a perusal of the histories of other vaginal operations by Battey and Sims will show that often the difficulties met with were equally great, sometimes not to be overcome.

The operation, in the large majority of cases, is a much more delicate and more difficult one than ordinary ovariotomy, in which we deal with a large mass which is brought plainly to view outside of the abdomen, and a distinct large pedicle is tied or clamped and cut in plain view right before the eyes of the operator. Moreover, the abdominal walls in ordinary ovariotomy have been distended, and as soon as the cyst is tapped they become relaxed so that the hand is not hindered in its movements, as it often is in Battey's operation while groping in the depth of the pelvic cavity with a tense abdomen.

I have said that in a majority of cases the operation is a difficult one, as those cases in which it is indicated generally present a pathological condition of the pelvic viscera, and especially of the ovaries and their attachments. Out of the forty-three cases of which I have full notes, the indication was given in twenty-seven by ovarian suffering (twenty-one ovaritis and ovaralgia, six ovarian dysmenorrhœa). In these cases we generally find a cystic degeneration of the ovaries and the remnants of pelvic inflammation more or less marked, simple adhesions or larger deposits of lymph encasing the gland, and binding it down. Not infrequently a hematocele bars the way.

In the remaining sixteen cases the indications were given by

[1] Case IV. p. 104, Transactions Am. Gynæcological Society, 1876.

hemorrhage from uterine fibroids in eleven; menstrual molimina due to malformation of sexual organs in three; and reflex neuroses in two. In this class of cases we do not necessarily have those unfavorable conditions, although the remnants of pelvic cellulitis will not infrequently be found to exist, and have in several instances greatly increased the difficulties of the operation.

How difficult a task it frequently is in cases of uterine tumor to remove, aye, even to seize the displaced and often adherent ovaries, has been shown by the cases of Hegar, Kaltenbach, Freund, and Martin, already cited. The most careful examination will not reveal, even to the skilled diagnostician, the hidden perils which he may have to encounter at every step during the operation. The surgeon must be prepared for every emergency.

The dangers of the operation, as far as we can now judge from the 43 cases completely reported, are greater than has been supposed, and the percentage of fatal cases in Battey's operation, as compared with the results of ordinary ovariotomy, bears out my assertion that the former is the more difficult and more dangerous operation.

Fourteen of the 43 cases operated on, 32.55 per cent., proved fatal; 29, or 67.44 per cent., recovered. Of the 27 cases in which the operation was performed on account of direct ovarian suffering, 9, or 33.33 per cent., proved fatal, and only 18, or 66.66 per cent., recovered.

Battey, in his paper read before the Georgia Medical Association in April, 1873,[1] says: "While admitting for myself the danger to life from the execution of normal ovariotomy, I have asked you to admit, on the other hand, that this danger is not great, and that it is not out of proportion either to the severity of the malady upon the one hand, or the magnitude of the results upon the other."

I agree fully with the last assertion, and believe, most emphatically, that the danger is not out of proportion to the severity of the malady, or the magnitude of the results. But it does seem to me that the operation is a more dangerous one than pictured by Battey, and that recent experience has proven it to be decidedly more dangerous than the removal of ovarian tumors, especially if the idea of the operation is fully carried out, and *both* ovaries are *completely* removed.

[1] Atlanta Medical and Surgical Journal, 1873.

In the same paper Dr. Battey says: "In the absence of statistics to guide us to a judgment of the fatality likely to ensue from normal ovariotomy, we can only approximate it by analogy. It is a familiar fact that a like operation has been in practice from time immemorial upon the domestic animals. It is well known that the danger therefrom is exceedingly small, and this without any special care or nursing."

Hegar[1] says: "We may expect that in future this operation will be a much more harmless one than ordinary ovariotomy. The prognosis will, of course, vary greatly according to the condition of the ovary and its surroundings. In case the operation is performed under the most favorable circumstances, without the existence of pathological conditions in the parts concerned, we may expect the same favorable results as in the spaying of healthy animals."

This comparison is not justifiable. We know, from the experience of physiologists, that the susceptibility of animals to inflammation is much less than it is in man. Not only is the response to traumatic insult in them less acute than it is in the human subject, but the operation itself in animals is a very simple matter, not to be compared with the difficulties encountered in the human subject, generally increased by pathological conditions. The laxity of the long ligaments in animals enables you to draw the ovaries—the uterus with them if you will—far out of the abdominal cavity without any difficulty whatever.

My friend, Dr. Greiner, of St. Louis, has twice operated on dogs. In one case he removed one ovary, with both horns of the uterus, through a single lateral incision, the animal running about at once, and recovering without the slightest bad symptom. In the other case, he removed both ovaries, making an incision in each loin. Recovery followed after some little indisposition.

The authority of Peaslee and Spencer Wells is quoted by Battey as to the decreasing mortality in ovariotomy, 90 per cent. recovering in well-selected cases, in the hands of experienced operators, and over 80 per cent. in cases not selected for their promising features. Spencer Wells' very correct statement is also referred to, that short incisions through the abdominal parietes—that the removal of a simple, unilocular cyst, and the absence of adhesions—are all circumstances which materially diminish the mortality of ovariotomy.

[1] Centralblatt f. Gyn., p. 27, No. 2, 1878.

Dr. Battey further says: "Have we not in normal ovariotomy yet more favorable conditions than these, and may we not reasonably expect a yet greater reduction of mortality than has been attained in the ordinary operation of ovariotomy?"

I say, most emphatically, No. In the average of cases the danger in Battey's operation is greater than it is in ordinary ovariotomy, and the conditions are less favorable. Above all, the operation last referred to, for the removal of simple, unilocular, non-adherent cysts, is an incomparably more simple operation, as the hand of the surgeon need often not enter the abdomen, and a less dangerous one by far than the removal of degenerate and adherent ovaries in the depth of the pelvic cavity.

The statistics of the first 43 cases, many of which were not even completed, either one ovary only being removed, or parts of an ovary being left in the pelvis, show a recovery of 67.44 per cent. to 80.0 per cent. in non-selected cases of ordinary ovariotomy. We must, moreover, remember that in the latter operation recovery is practically synonymous with cure, while in the former this has unfortunately not been the case. Of the surviving 29 cases, 9 only, 20.9 per cent. of all the patients operated on, are marked cured, and 11 are more or less improved. The number of cures will undoubtedly be increased, but so also the fatality of the operation, when its indications and its methods are fully understood, and *both* ovaries are *completely* removed.

These are the facts as regards the dangers of the operation; but why is it more dangerous than ordinary ovariotomy?

1. It is a more delicate and a more difficult operation, and in the majority of the cases in which it is indicated, the hand of the surgeon must work in the depth of the pelvic cavity to liberate the small gland from the grasp of the inflammatory products in which it is imbedded.

2. The pedicle cannot be fastened in the incision, barring some few exceptional cases, and that pedicle is frequently not a clear stump, but a torn and broken mass surrounded by lacerated tissue.

3. The peritoneum, in the abdominal cavity at least, is in a healthy condition, quick to respond to the slightest insult; while in the case of ovarian tumors the constant friction and the steadily increasing compression, caused by the slow growth of the tumor, change the sensitive nature and the absorbent qualities of the peritoneum—we may say harden it—so that it is less likely to react, and will not as readily absorb septic matter.

As an earnest advocate of this young operation, *which we owe to Georgia's talented surgeon, our countryman, Robert Battey*, I have endeavored to expose freely the difficulties and dangers connected with it, deeming this a safeguard and a guide to a more successful future. Brilliant results have already been achieved by the operation, and it fairly promises, in the hands of skilful surgeons, to prove the means of relief to many a hapless sufferer.

However great the dangers, I can but again repeat "they are not out of proportion to the severity of the malady, and the magnitude of the results."